

The National Climate Assessment

Overview

Fred Lipschultz

NASA

NCA Regional Coordinator

08 April 2014



US Global Change Research Program

Global Change Research Act (1990):

“To provide for development and coordination of a comprehensive and integrated United States research program which will assist the Nation and the world to **understand, assess, predict, and respond** to human-induced and natural processes of global change.”



United States
Global Change
Research Program



13 Federal Departments & Agencies +
Executive Office of the President

More information at

<http://www.globalchange.gov>



U.S. Global Change Research Program
National Climate
Assessment

US Global Change Research Program Strategic Plan Goals

Advance Science: *Study Climate and Global Change*

- Advance scientific knowledge of the integrated natural and human components of the Earth system

Inform Decisions: *Prepare the Nation for Change*

- Provide the scientific basis to inform and enable timely decisions on adaptation and mitigation

Conduct Sustained Assessments: *Assess the US Climate*

- Build sustained assessment capacity that improves the Nation's ability to understand, anticipate, and respond to global change impacts and vulnerabilities

Communicate & Educate: *Make Our Science Accessible*

- Advance communications and education to broaden public understanding of global change and develop the scientific workforce of the future

The Third National Climate Assessment



Goal

- Enhance the ability of the United States to **anticipate, mitigate, and adapt** to changes in the global environment.

Vision

- Advance an **inclusive, broad-based, and sustained process** for assessing and communicating scientific knowledge of the impacts, risks, and vulnerabilities associated with a changing global climate in support of decision-making across the United States.



NCA Structure



NSTC
National Science and Technology Council



CENRS
Committee on Environment,
Natural Resources and Sustainability



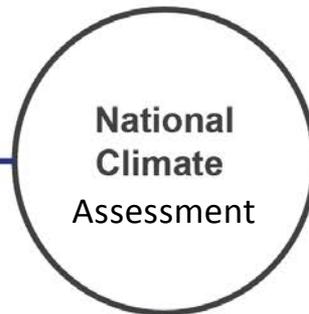
SGCR
Subcommittee on Global Change Research

USGCRP
U.S. Global Change Research Program

INCA Working Group
Interagency National Climate Assessment
Working Group

USGCRP National Coordination Office
NCA Coordination Office

NOAA National Climatic Data Center
NCA Technical Support Unit



Federal Advisory Committee

NCADAC
NCA and Development Advisory Committee

NCADAC Working Groups

Chapter Author Teams

Review Editors

NCAnet

External Partners

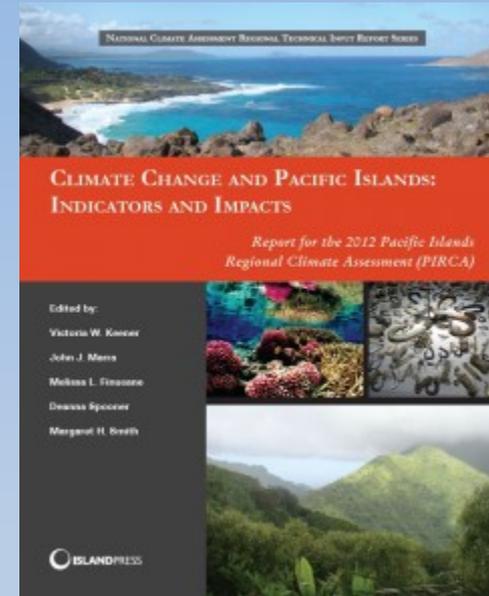


U.S. Global Change Research Program

**National Climate
Assessment**

Public Inputs

- Workshops, listening sessions, and symposia
- First “request for information”: 250+ technical inputs from 100+ individuals and teams, including:
 - New regional climate histories and projections for each region
 - New sea level rise scenarios
 - **In-depth foundational assessments** for each region and most sectors
- Public comments on draft report January 14 – April 12, 2013



Island Press is publishing revised versions of most of the regional technical inputs:

<http://www.cakex.org/NCAreports>

Federal agency-sponsored reports:

www.globalchange.gov

Regional climatologies, projections, and scenarios:

<http://scenarios.globalchange.gov>

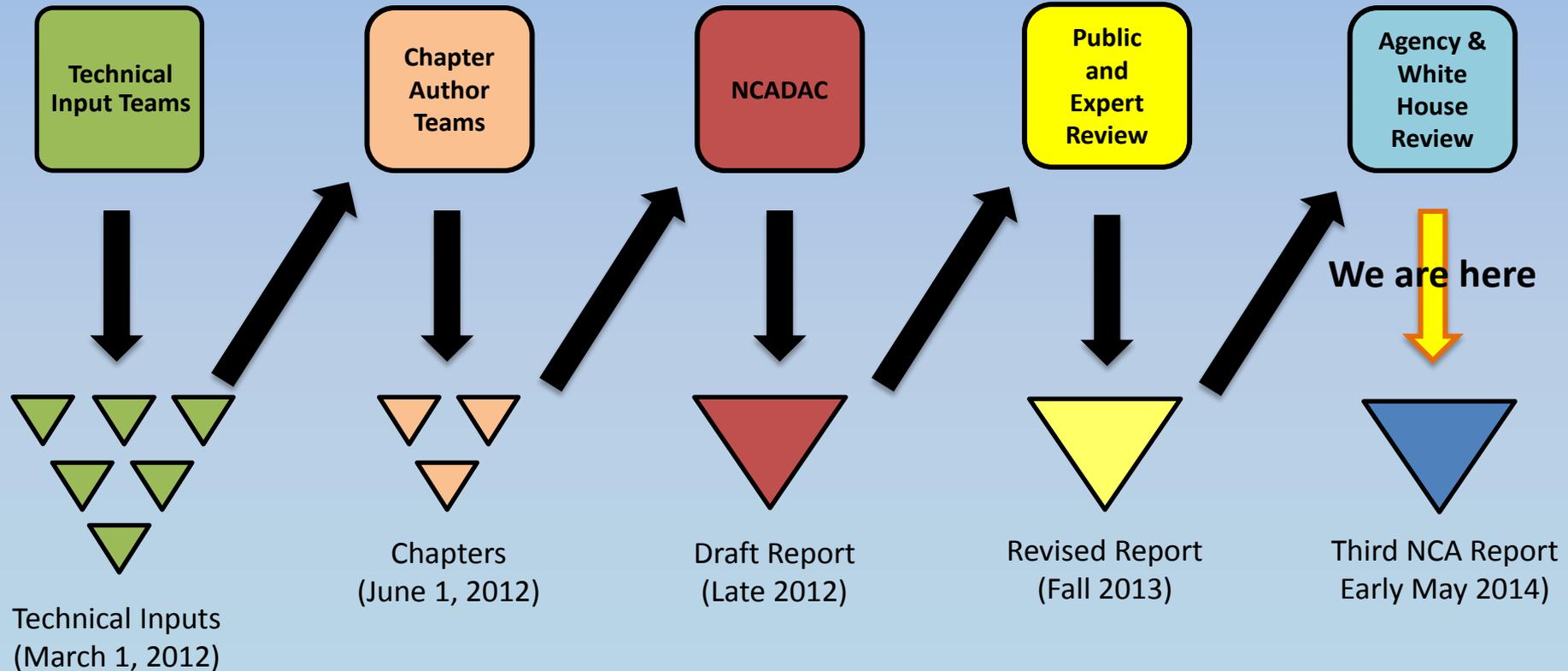


U.S. Global Change Research Program
**National Climate
Assessment**

Third NCA Report Process

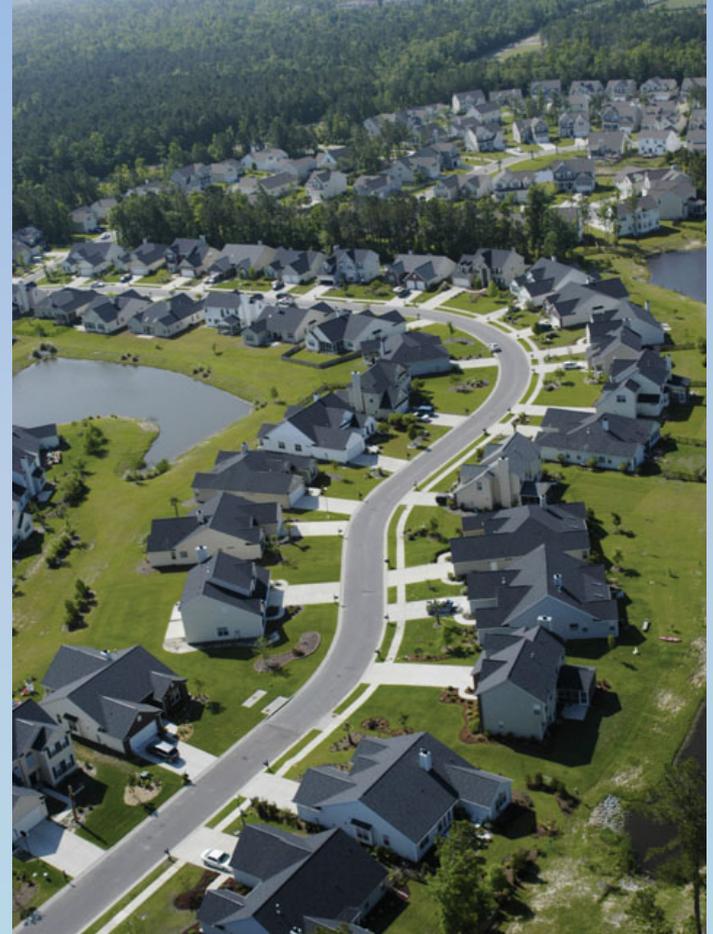
Federal agencies,
Universities, NCAnet
members, and others

January 14 –
April 12, 2013



Outline for Third NCA Report

- Letter to the American People
- Executive Summary: Report Findings
- Introduction
- Our Changing Climate
- Sectors & Sectoral Cross-cuts
- Regions & Biogeographical Cross-cuts
- Responses
 - Decision Support
 - Mitigation
 - Adaptation
- Agenda for Climate Change Science
- The NCA Long-term Process
- Appendices
 - Commonly Asked Questions
 - Expanded Climate Science Info



Sectors

- Water Resources
- Energy Supply and Use
- Transportation
- Agriculture
- Forestry
- Ecosystems and Biodiversity
- Human Health



Sectoral Cross-Cuts



- Water, Energy, and Land Use
- Urban Systems, Infrastructure, and Vulnerability
- Impacts of Climate Change on Tribal, Indigenous, and Native Lands and Resources
- Land Use and Land Cover Change
- Rural Communities
- Biogeochemical Cycles

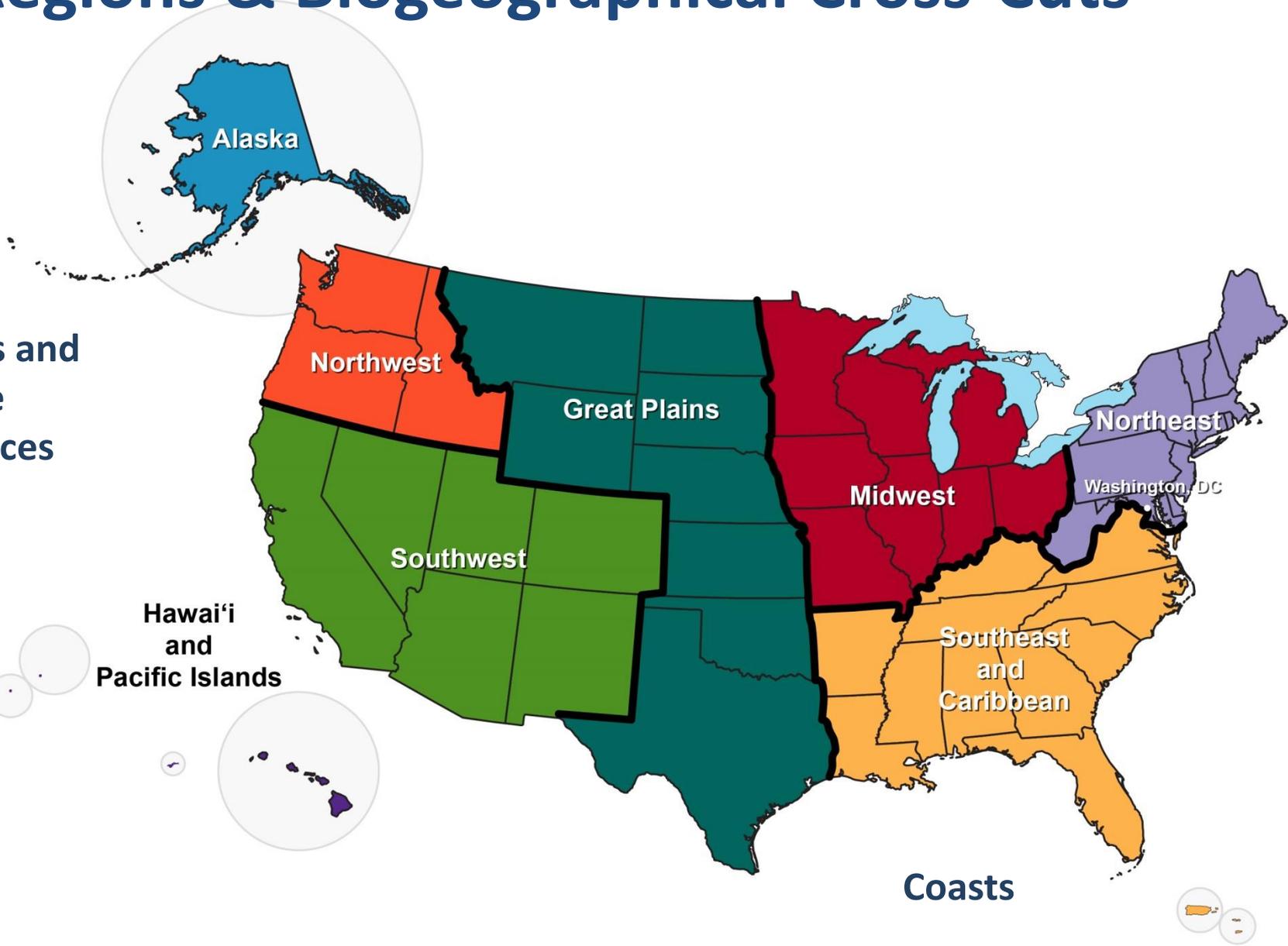


Regions & Biogeographical Cross-Cuts

Oceans and
Marine
Resources

Hawai'i
and
Pacific Islands

Coasts



Anticipated NCA3 Products

- PDFs
 - All publications will be available as PDFs
 - Full report, Highlights, other derivative materials (e.g., overview, two page spreads on regions)
- Website
 - Full report & Highlights in HTML
 - Graphics (high-resolution files, interactive figures)
 - Supporting information
- Print (limited run)
 - Highlights
 - Overview
 - Two page spreads (e.g., regions, report findings)



U.S. Global Change Research Program

**National Climate
Assessment**

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CHAPTER ICONS

In the lower left corner of each section, these icons identify which chapters of the full report were drawn upon for that section.

Our Changing Climate	Northeast
Water Resources	Southeast and Caribbean
Energy Supply and Use	Midwest
Transportation	Great Plains
Agriculture	Southwest
Forests	Northwest

Sample pages from Highlights

REPORT FINDINGS

These findings distill important results that arise from this National Climate Assessment. They do not represent a full summary of all of the chapters' findings, but rather, a synthesis of particularly noteworthy conclusions.

1. Sea level rise will impact coastal communities and ecosystems.

Sea level rise (SLR) is projected to increase the risk of coastal flooding and erosion, particularly in low-lying areas. This will impact coastal communities, infrastructure, and ecosystems. SLR is also expected to contribute to saltwater intrusion of freshwater aquifers and wetlands, and to increase the frequency and severity of coastal storms and hurricanes.

2. Extreme weather events will increase in frequency and severity.

Extreme weather events, such as hurricanes, droughts, and heavy precipitation events, are projected to increase in frequency and severity. This will impact human health, infrastructure, and ecosystems. Extreme weather events are also expected to contribute to sea level rise and coastal flooding.

3. Widespread impacts will be felt across the United States.

Climate change is expected to have widespread impacts across the United States, including impacts on human health, infrastructure, ecosystems, and agriculture. These impacts are expected to be felt in both urban and rural areas, and in both the eastern and western United States.

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HAWAII AND THE PACIFIC ISLANDS

KEY MESSAGES

Hawaii and the Pacific Islands are among the most vulnerable regions in the world to the impacts of climate change. Sea level rise, extreme weather, and other climate impacts are expected to have significant impacts on these regions, including impacts on human health, infrastructure, ecosystems, and agriculture. These impacts are expected to be felt in both urban and rural areas, and in both the eastern and western United States.

Higher Sea Level Rise Impacts Pacific

The map shows projected sea level rise (SLR) impacts on the Pacific Islands. The map uses a color scale to indicate the extent of SLR, with red representing the highest SLR and blue representing the lowest. The map shows that SLR is expected to be highest in the western Pacific and lowest in the eastern Pacific.

High Mountain Glaciers Retreating

High mountain glaciers are retreating, which is a clear sign of climate change. This is expected to have significant impacts on ecosystems and water resources. Retreating glaciers are also expected to contribute to sea level rise.

SELECTED ADAPTATION

Selected adaptation strategies for mountain regions include: building resilient infrastructure, protecting ecosystems, and improving water management. These strategies are expected to help reduce the impacts of climate change on mountain regions.

Creating a Sustained Assessment Process

- Meeting the GCRA requirements and increasing national needs
- CAP and EOs promote coordination at regional and other scales
- Producing the quadrennial report is not the goal – it's a harvesting of nationwide activities over the preceding period
- Requires shift in thinking – it's the means (process), not the end (a report)

Sustained Assessment

Goals:

- **Deepen understanding** of climate change effects on a particular sector or region
- Investigate **new scientific issues** of concern
- **Build capacity** to conduct more sophisticated, useful, and credible assessments over time
- Better **support decisions** that reduce risk and increase opportunities
- Enable **full review** of issues of national importance in an efficient & credible way

Activities:

- **Topical reports:** Health, Food Security, Forests & Drought
- **Scenarios:** Population and Land Use & Land Cover Change
- **Indicator System:** Develop national indicators of change
- **Partnerships:** NCAnet and Federal partnerships

The Sustained National Climate Assessment

Foundational reports, e.g.,

Scenario development • Indicators • Valuation

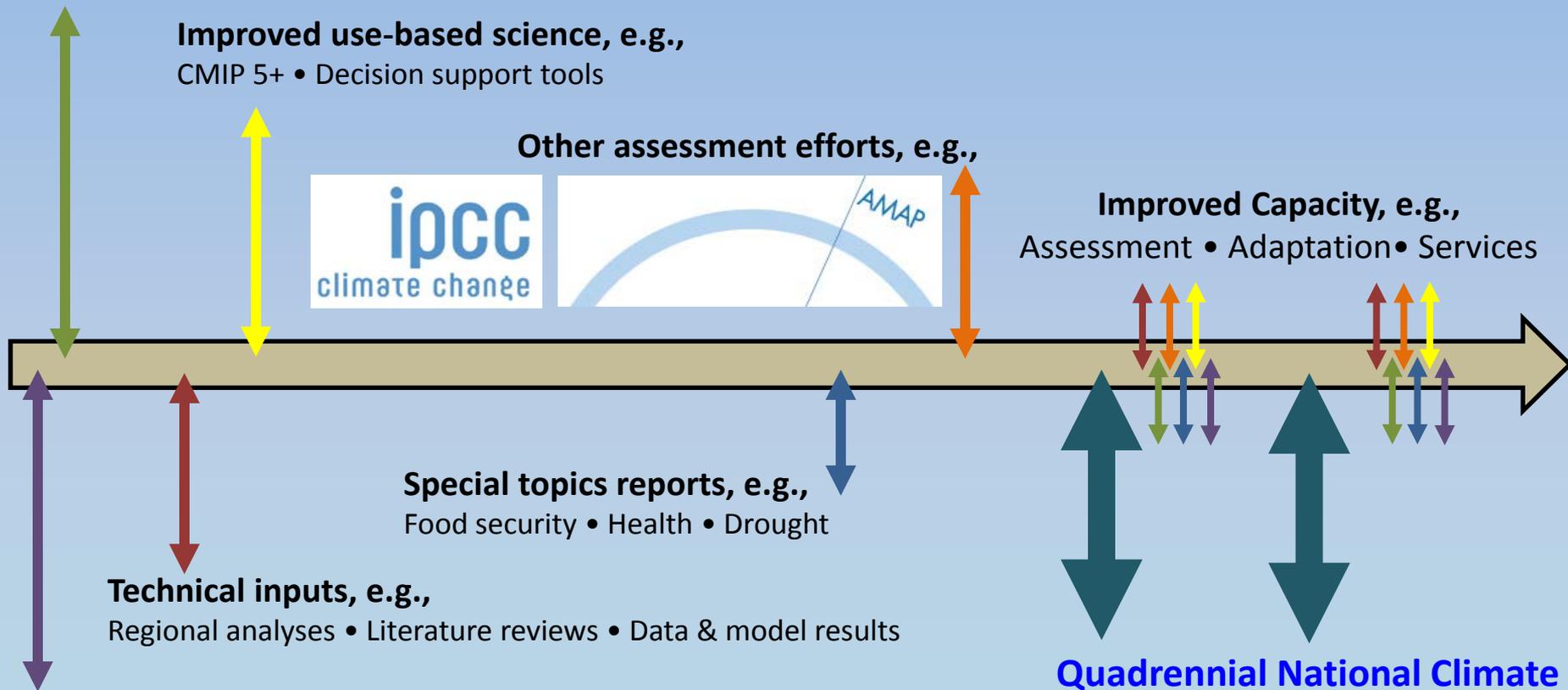
Improved use-based science, e.g.,

CMIP 5+ • Decision support tools

Other assessment efforts, e.g.,



Improved Capacity, e.g.,
Assessment • Adaptation • Services



Special topics reports, e.g.,

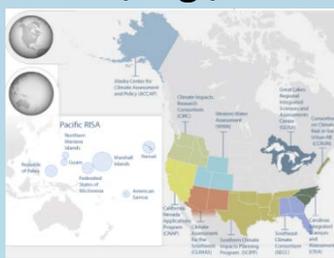
Food security • Health • Drought

Technical inputs, e.g.,

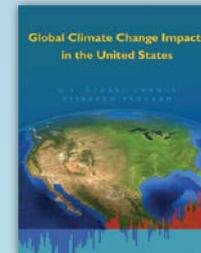
Regional analyses • Literature reviews • Data & model results

Quadrennial National Climate Assessment Reports

Connecting to and building networks, e.g.,



**NCAnet:
Partners in
Assessment**



DOI Climate Science Centers

Regional Integrated Sciences & Assessments (RISA)

NCAnet: Partners in Assessment

- A network of organizations that extend the NCA process and products to their members and stakeholders
- Build long-term capacity to conduct and use assessments
- Cultivate partnerships with organizations that will be a part of the sustained assessment process
- Organized access to the NCA process and products
- Create and sustain relationships with other organizations interested in climate change
- Share ideas, wisdom, and best practices within and across disciplines
- Collaborate on products and activities that “translate” NCA for a variety of audiences



U.S. Global Change Research Program

**National Climate
Assessment**



NCAnet: Partners in Assessment

100+ partner organizations

- Professional societies
- Academic institutions and consortia
- Non-governmental organizations
- Local and state government departments
- Private sector

Online at

<http://ncanet.usgcrp.gov>

- List of partners' NCA-related activities
- Monthly conversations among existing partners
- “Affinity groups” model for collaboration on activities
- Toolkit of materials related to USGCRP and the NCA



Thank you!

For more information:

<http://assessment.globalchange.gov>

- or -

Fred Lipschultz

flipschultz@usgcrp.gov

